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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/392,434      | 09/09/1999  | LARRY L. BRADFORD    | ACA6124PDUS         | 1107             |

7590 12/03/2003

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EXAMINER

SERGEANT, RABON A

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1711

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/392,434

Applicant(s)

BRADFORD ET AL.

Examiner

Rabon Sergeant

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-11, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

1. Claims 1-3, 5-11, 13, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The values added by the amendment of May 9, 2003 are referred to within the art as hydroxy numbers, rather than hydroxyl functionality. "Hydroxyl functionality", as it is known in the art, refers to the number of functional groups per molecule. Despite applicants' response, the position is taken that applicants' use of the term is repugnant to the art and introduces an unnecessary degree of ambiguity into the claims.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 5, 6, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fearing ('534 or '633) in view of Keppeler et al. ('612).

Fearing discloses the use of oligomeric organophosphorus flame retardants within polyurethane foams and further discloses that the oligomeric flame retardants may be blended with additional flame retardants. See column 8, lines 27-34 within the Fearing references.

4. Though Fearing discloses that additional flame retarding agents may be used, the primary references fail to recite specific examples. However, non-halogenated phosphate ester compounds were widely known flame retardants for polyurethane foams at the time of invention. This position is supported by the teachings of numerous such flame retardants within Keppeler et al. at column 7, line 33 through column 8, line 67.

5. Therefore, the position is taken that it would have been *prima facie* obvious to select a non-halogenated phosphate ester flame retardant from the numerous flame retardants of Keppeler et al. and employ said flame retardant as a component of the aforementioned, disclosed flame retardant blend of the primary references.

6. Applicants' response has been considered; however, it is insufficient to overcome the prior art rejection. The term, "organophosphate", does not exclude the compounds of Fearing, since the compounds of Fearing contain phosphate groups and, therefore, can properly be referred to as organophosphates. Despite applicants' arguments, there is nothing within the rejected claims that excludes the presence of phosphonate groups within the claimed oligomeric flame retardant and no justification has been provided for applicants' argument that the compounds of Fearing cannot be considered to be phosphate compounds. Applicants' cited references provide no support for arguments that the language, "organophosphate", must exclude other groups, such as phosphonate groups. Despite applicants' remarks, the examiner is well aware of the differences between phosphate groups and phosphonate groups; however, this is not

the issue at hand. According to applicants' reasoning, the term, organophosphate, must exclude phosphonate groups (and presumably all other groups); however, this reasoning is flawed. For example, if this argument had merit then applicants' chemical nomenclature would require that "polyurethane" contain only urethane groups and no other group, such as ether, ester, or urea groups; however, this interpretation is clearly not art recognized or accepted.

7. Claims 1-3, 5-7, 9-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicken et al. ('965) in view of Keppeler et al. ('612).

Sicken et al. disclose the use of oligomeric phosphate flame retardants within polyurethane foams and further disclose that the oligomeric flame retardants may be blended with additional flame retardants. See column 4, line 32 within Sicken et al.

8. Though Sicken et al. disclose that additional flame retarding agents may be used, the primary reference fails to recite specific examples. However, non-halogenated phosphate ester compounds were widely known flame retardants for polyurethane foams at the time of invention. This position is supported by the teachings of numerous such flame retardants within Keppeler et al. at column 7, line 33 through column 8, line 67.

9. Therefore, the position is taken that it would have been *prima facie* obvious to select a non-halogenated phosphate ester flame retardant from the numerous flame retardants of Keppeler et al. and employ said flame retardant as a component of the aforementioned, disclosed flame retardant blend of the primary reference.

10. Applicants' response has been considered; however, it is insufficient to overcome the prior art rejection. Lastly, in response to applicants' arguments concerning Keppeler et al., the examiner maintains the position that Keppeler et al. is replete with references to organic

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phosphate flame retardants. The deficiencies argued by applicants have been addressed by reliance on the primary reference. In considering the combined teachings of the references, the position is ultimately taken that evidence of obviousness outweighs the evidence of nonobviousness.

11. Claims 7, 8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicken et al. ('965) in view of Keppeler et al. ('612), as applied to claims 1-3, 5-7, 9-11, and 13 above, and further in view of Hardy et al. ('035 or '042).

As aforementioned, the combined teachings of Sicken et al. and Keppeler et al. are considered to render obvious the combined use of oligomeric and non-oligomeric phosphate flame retardants; however, the non-hydroxyl group bearing oligomeric species of instant claims 7, 8, 13, and 14 are not disclosed by the primary references. Still, the claimed non-hydroxy group bearing oligomeric species were known at the time of invention, as evidenced by Hardy et al. The position is taken that the oligomeric species of Hardy et al. are close enough in structure and function to those of the primary reference that one would have expected them to function with non-oligomeric flame retardants, as taught by the primary references. Therefore, it would have been obvious to utilize the flame retardants of Hardy et al. with the aforementioned non-oligomeric flame retardants, so as to arrive at the instant invention.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

R. Sergent  
December 1, 2003

  
**RABON SERGENT**  
**PRIMARY EXAMINER**